



Groundwater Coordinating Committee

END OF YEAR REPORT FOR 2016

Scott Stewart and Kasey Kathan, Committee Chairs

Executive Summary

Major accomplishments for the year 2016 were:

- Results of 2015 LEAN event shifted GW reclassifications (Class IV) from GWCC review and incorporated it into the Waste Management Division's Corrective Action Plan process.
- A GWCC subcommittee provided extensive comments on a draft of the Groundwater Protection Rule and Strategy and presented it to the Department.
- Provided a forum for technical presentations on various groundwater related topics including PFOA/PFOS contamination investigations, groundwater corrosivity, lead and arsenic in soils.
- Reviewed legislative bills, Agencies rule revisions, and gathered technical input to inform improvements to the well completion report database and process and outreach efforts for Regional Planning Commissions, Private Well conference and municipal workshops.
- Took member feedback and created a framework for a draft Vermont Groundwater Management Plan currently under development.
- Maintained important lines of communication with Federal (EPA, USGS) and State (VDH, Agency of Agriculture, VRWA, municipalities) groups and stakeholders within the consulting and advocacy communities.

Role of Groundwater Coordinating Committee

The Groundwater Coordinating Committee (GWCC) was established by the legislature (10 VSA Chapter 48) to serve as an advisory group to bring groundwater issues of concern to the attention of the Secretary. The committee also provides a forum for input by various stakeholders - EPA, state agencies (e.g. Health and Agriculture), consulting firms and advocacy groups, among others -- on rule, initiatives and programs related to groundwater use and management. At the start of the year, Rodney Pingree, DWGPD Water Resources Section Chief and the long-standing Chair of the GWCC stepped down and appointed Scott Stewart, Hydrogeologist for DWGPD as Chair. Kasey Kathan, Hydrogeologist, for WMPD was made Co-Chair.

The last quarter of 2015 was taken up by a subcommittee revising a draft of the Groundwater Protection Rule and Strategy (GWPRS). This draft was then taken up by a Department rule group to finalize a draft prior to starting the formal rule making process. This revision continued thru 2016 but has been held up due to the "high priority" rule going forward to incorporate groundwater enforcement standards for the chemicals PFOA and PFOS into the GWPRS. Revising and adopting the GWPRS is a key component in the development of a Comprehensive Groundwater Management Plan and activities of the Groundwater Coordinating Committee.

Lean Event for GW Reclassification - July 2015

A Department LEAN event was held to explore improvements to the reclassification of groundwater process historically conducted by the GWCC. Program staff and outside stakeholders re-tooled the process to incorporate GW reclassification to Class IV as part of the site characterization and corrective action plan review within Waste Management and Protection Division. This removed the GWCC and DWGPD from being administrators, issuing the public notice, receiving and responding to comments. Changes to the reclassification process have been included in the GWPRS draft currently in development. As part of the process, GWCC members and the public will have opportunity for input on sites likely to be reclassified (IV) during the public input phase of the Corrective Action Plan development. Class I and II reclassifications will remain administered under the aegis of the DWGPD.

GWCC Member Survey - February 12 2016 meeting

In January of 2016, the GWCC conducted a survey and brainstorming of members to prioritize concerns and initiatives from previous years and to inform the work of the committee in the year ahead. The results were reviewed and discussed by the committee at the **February 12 meeting** and action items were incorporated into a preliminary outline for a Groundwater Management Plan. The general findings were as follows:

Suggested Discussion Topics and Action Items	Themes for Groundwater Management Plan
1. Surface water and groundwater connections	1. Coordinate groundwater remediation efforts with surface water cleanup efforts
2. Development of the groundwater interference database	2. Advocate for statewide assessment of groundwater recharge rates and recharge area mapping
3. Promotion of Class II areas	3. Assessment of groundwater withdrawal sustainability
4. Storm water and groundwater connections	4. Acknowledge and support multiple uses of groundwater
5. Contaminated urban groundwater management	5. Serve as a legislative resource and groundwater advocate
6. Determination of allowable risk to human health (setting standards) for groundwater	6. The plan should document:
7. Regional Planning Commission outreach	<ul style="list-style-type: none"> ▪ Decisions regarding risk based assessment ▪ Strong requirement for review of where groundwater use will limit other property owners use of the resource
8. Discussion on developments in groundwater flow, contaminant transport and site characterization	
9. Supporting the Dept. of Health 'tracker' program and new private well initiative	

With the 2008 revisions to Chapter 48, groundwater is now held in trust for the public, affording it a higher level of awareness and protection. A major project for 2016 was to incorporate past and current concerns from this statutory framework and expand it into a full-scale Vermont Groundwater Management Plan. The draft plan addresses the eight tasks the Secretary is charged with under Chapter 48 and incorporates strategic plan goals and objectives from Drinking Water and Groundwater Protection Division (DWGPD), the Vermont Geological Survey (VGS), other state programs and federal projects such as applying for a USGS Water Research and Use grant. Specific, measurable and time based actions are provided for each task. The draft currently in development by the Committee Chairs will be presented to and reviewed by the full committee following internal Department review and acceptance.

Bennington Contamination – March 24 2016 meeting and all subsequent meetings

At about the same time in February, the PFOA/PFOS contaminant investigation in Bennington took center stage with significant staff time and resources expended throughout the rest of the year. From a scientific stand point this event brought together a coalition of disciplines and knowledge. John Smeltzer and Michael Smith, WMPD (and others throughout the year) provided reports on water quality sampling, field work, public outreach, and risk assessment and how they were coupled with bedrock and surficial mapping, groundwater flow, air quality and meteorological data, contaminant fate and transport, GIS and GPS location of wells. Updates on findings and progress were a standing item at all subsequent meetings.

Science Advisory Committee - March 24 2016 meeting

Marjorie Gale, State Geologist and co-chair of the Science Advisory Committee formed in 2016 presented highlights of activities including the significant task of gathering information for the Secretary on contaminants of concern. Lists of unregulated chemicals, their nature, toxicity, health effects and much more were consolidated. Personal Care Products, pharmaceuticals, and commercial and industrial chemicals (old and new) were among the thousands evaluated. This compilation of chemicals of concern were fed into the newly formed Toxics Substances Work group.

Presentations on mapping and studies – March 24, August 24, October 20 meetings

The GWCC was kept abreast of the latest mapping and groundwater quality analyses relevant to Vermont. At the **March 24 meeting**, the Vermont Department of Health presented their newly released tracking/data reporting program “Tracker” that includes public and private drinking water systems data.

Jon Kim, Vermont Geological Survey, at our **March 24 meeting** provided several reports on work completed or in progress by the Geology Division:

- A) Hinesburg Thrust Project – Completed in 2014, article ‘*Tectonic evolution of a Paleozoic thrust fault influences the hydrogeology of a fractured rock aquifer, northeastern Appalachian foreland*’ is available.

- B) Nitrate Projects with VT Agency of Agriculture
 - a. East Montpelier Nitrate Project – article in preparation
 - b. Sutton Nitrate Project

- C) Bennington PFOA Project – in development
 - a. Background geologic maps – about a dozen have been developed
 - b. Geo-locating Wells – in collaboration with Bennington College
 - c. Field work to map geologic structures

- D) Hinesburg Well Project – Borehole geophysics in collaboration with SUNY-Plattsburgh

- E) Comprehensive Groundwater Analysis of Bedrock Aquifers (with Middlebury College and Department of Health) – looking at 34 parameters in Calais and Woodbury, Monkton, Champlain Valley shales

- F) Champlain Valley Fracture Analysis (with UVM and Green Mountain College)

Joe Ayotte, USGS gave a presentation at our **August 24 meeting** on a newly released country-wide study with specific attention to New England water corrosivity. Lead, iron, arsenic, manganese and other inorganic chemicals were evaluated with iron and lead having a high correlation. Several additional areas of investigation, in conjunction with work Jon Kim, VGS has done/is doing, were highlighted.

Anne McMillan, Agency of Agriculture, gave a talk at our **October 20 meeting** on studies of lead and arsenic in apple orchards. This was an issue brought to our attention by Vermonter’s for a Clean Environment who had received questions about a potential development within a former apple orchard. Anne provided historical usage info, current studies (mobilization is not a major concern) and Best Management Practices for areas where development of orchard areas is considered.

Rule Revisions – May 19, March 24, July 20, October 20 meetings

Several rules are undergoing revision or being developed from existing practices and were discussed. Scott Stewart provided an update for several House and Senate bills moving thru legislative review at the **March 24 meeting** with follow up status at the **May 19 meeting**. Specifically, H.595 allows use of surface water by single family homeowners as a drinking water source. Draft rules for surface water use will be incorporated into the working draft of the Wastewater System and Potable Water Supply Rules.

Lynda Provencher and Linda Elliot, Waste Management and Protection Division, at the **July 20 meeting** discussed the Investigation and Remediation of Contamination Rule (iRule) that is nearing a final draft stage; Watershed Management Stormwater Management Rules were submitted to ICAR; the Agency of Agriculture’s Required Agricultural Practices Rule is in LCAR; DWGPD Wastewater System and Potable Water Supply Rules are nearing final draft and the Water Supply Rule is in early stages of re-drafting.

Jeff Comstock, Agency of Agriculture presented a slide show on the Required Agricultural Practices Rule at our **October 20 meeting** as it was presented to LCAR. The proposed rules expand the size and type

of farms and agricultural practices under their jurisdiction. Of relevance to the GWCC, there are setback distances to drinking water supplies along with the ability for towns have jurisdiction over small farms if zoning ordinances are in place.

Act 250 Documents – May 19 meeting

Scott Stewart, Margorie Gale and Michael Smith are working with Office of Planning and Act 250/Natural Resources Board to clarify and re-vamp and simplify guidance documents, Plans, and Best Management Practices (BMP) relevant to Department activities while clarifying programs responsible for review and providing specific submission information to the applicant. Draft documents are being reviewed by program management and Office of Policy and Planning and ANR Act 250 staff. Drafts will go to the GWCC within the next month or so.

Well Completion Report Database Improvement – July 20, August 24 meetings

During the summer, Scott Stewart began gathering input for upgrades to the Well Driller Database (110,000+ Well completion reports). This is one of the foundational databases and ANR Atlas layers for groundwater management used but has limitations in data accuracy and access/export. There is significant use of the data by VGS (Geology), Waste Management Division, the public and consulting community. This also would support the goals of a USGS Water Research Grant DWGPD and VGS has applied for. At the **July 20** and **August 24 meetings**, Scott solicited feedback on how to improve the data, its use and additional functionality while providing updates on meetings with internal staff (IT and GIS).

Several tasks have been identified and subsequent (intra division) meetings are ongoing to refine the scope and prioritize them, mainly;

- a. Developing an on-line form for Well drillers to enter reports (office or from the field using tablets/existing technology)
- b. Creating or improving process for staff and public to give us corrected WCR or locations
- c. Data query and clean-up of existing database information
- d. Combined with USGS grant application or separate project to use staff, interns to field locate known wells and GPS locations

Municipal Outreach and Source Protection – July 20, August 24 meeting

Kira Jacobs, EPA; Liz Royer, Vermont Rural Water Association (VRWA), Marjorie Gale, VGS and Rodney Pingree, DWGPD at the **July 20 meeting** discussed the plan they developed for Source Protection and Watershed Management outreach to Towns and set up four workshops that included nine out of 11 Regional Planning Commissions. These workshops were well received and more are planned with EPA funding to cover other topics such as Brownfields, Private Well testing, Sole Source designations and State Revolving Loan Funds.

At our **August 24 meeting**, Liz Royer, VRWA, and Jordyn Gellar (UVM Rubenstein School intern) presented her completed review of town ordinance and plans for Source Protection efforts. Results varied state-wide, some are great, some mention SPA but have no maps, Regional Planning Commissions provide some towns with maps, etc. A final report will be provided with some of the best plans.

Drought Outreach – emerging issue – October 20 meeting

The mild winter and the abnormally dry conditions this spring and summer have taken a toll on water levels, and may impact drinking water supplies through fall and into the winter. The State Drought Task Force has been re-formed and has an online form to report water shortages or outages, Vermont Department of Health has a Safe Water Resource Guide online, press releases and water conservation notices have been issued and the DWGPD has contacted Public systems that might be at risk for drought (served by shallow wells or springs). Some Public systems have noted lower yields; some systems are using supplemental sources, but most sources that have gone thru the Public Source Testing and Permitting process are in good shape.

- Note: Some funding may be available for homeowners (On-site Loan Program for failed septic or water supply systems) and State Revolving Funds for Public Water Systems.

Looking Forward

For 2017, we will be leading stakeholder discussion on the draft Groundwater Management Plan and working on implementing specific tasks outlined within the plan. As always the Groundwater Coordinating Committee will continue to address and discuss new topics as they arise and will provide support to the Secretary as needed.

END NOTE

We would like to thank Rodney Pingree for his years chairing this committee. His dedication to Source Protection and Groundwater Protection is commended. Thanks for all the hard work, outreach and coordination!

To all those who attended, called in and particularly our presenters – We appreciate all of you taking the time (many of you unpaid!) to share your knowledge, perspective and technical abilities to make and keep this a vital and dynamic effort.

Finally, and significantly, Gail Center retired August 1 from the Vermont Department of Health. This is a sad day for us and anyone who has worked with Gail (Scott started work with Gail at VDH over 27 years ago). There is unanimous respect for Gail and the huge amount of work she has done, her experience and input she has provided on various committees (plumbers board, Water Well Advisory Committee, Technical Advisory Committee, etc.), the “my water smells funny” expert, water supply design and treatment, etc. Her willingness to help, her professionalism, advice and overall knowledge will be sorely missed.